2 PROPOSED ALTERNATIVES

Using comments from the City of Lincoln, Placer County, the Resource Agencies including U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (ACOE) and the community, Caltrans and FHWA developed numerous alternatives to meet the transportation needs of the community while preserving the natural habitat of the area. The preferred alternative (D13 North Modified) was selected based on the extent to which the project met the stated purpose and need, design standards, public input, comparison of the environmental impacts, comments received at the public hearing and by correspondence and is the least environmentally damaging practicable alternative.

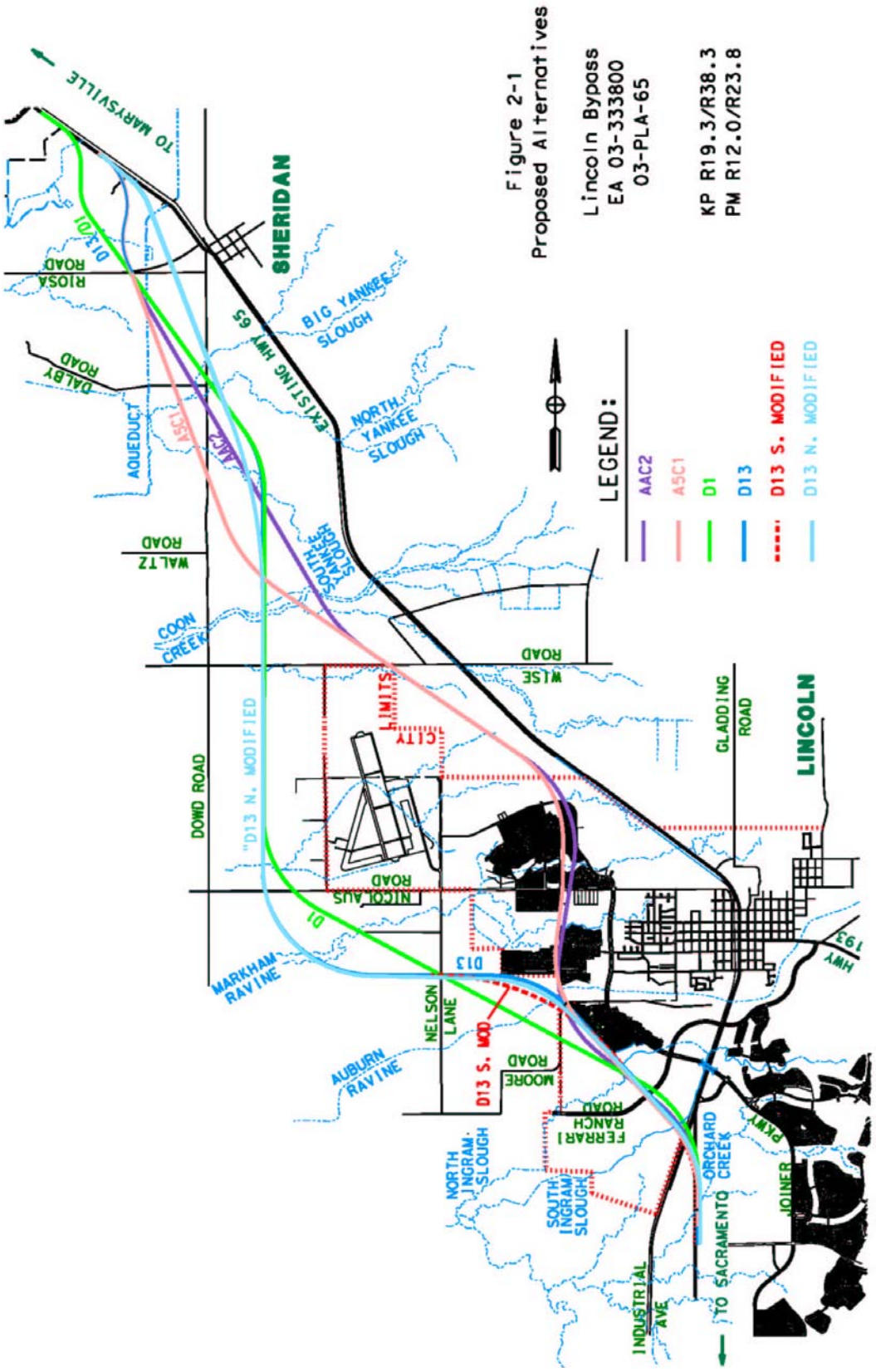
The Draft environmental document considered seven alternatives: the "No Build" and six "Build Alternatives": A5C1, AAC2, D1, D13, D13 South Modified and D13 North Modified. Considerable effort went into designing a facility that minimized impacts to the wetland areas and residences while providing adequate relief from traffic congestion and improving inter-regional movement of goods and services.

The following screening criteria considered necessary to achieve the project's purpose and need were developed in cooperation with the FWS, the ACOE and the EPA:

- The project should improve service levels and maintain, at a minimum, LOS D in the project area through the year 2025.
- The project should improve and maintain traffic and pedestrian safety in the project area.
- The project should minimize displacement of existing residences and businesses.
- The project should minimize impacts to wetlands and listed species.
- The project should be constructed at a reasonable cost.

The alternatives discussed below and shown in Figure 2-1 were developed with these screening criteria in mind. A full range of alternatives that included a highway bypass, non-highway options or improving the existing alignment though the City of Lincoln were investigated through the Major Investment Study (MIS). Some of these approaches either did not meet the project's purpose or need, or did not meet some or all of the screening criteria. These alternatives are described in the section labeled "Alternatives Withdrawn From Consideration" which follows this section.

Figure 2-1 Draft EIS/R Proposed Alternatives



2.1 ANALYZED ALTERNATIVES

Seven alternatives were evaluated and described in the Draft EIS/R, the "No Build," AAC2, A5C1, D1, D13 and D13 South Modified and D13 North Modified. The alternatives are described below and shown on Figure 2-1, Proposed Alternatives. Ten more were briefly described but rejected in the Draft EIS/R, they are described in Section 2.2, at the end of this chapter. Below are brief descriptions of the alternatives evaluated in the Draft EIS/R and the reason they were not chosen as the preferred alternative. Table 2-4 summarizes the impacts each alternative has on land use, wetlands, natural resources and right-of-way impacts as well as compares the cost of each alternative.

2.1.1 No Build

The "No Build" alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the "No Build" alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to deteriorate to a LOS F within the city limits.

The new development occurring south and southwest of Lincoln that is currently approved will be built whether or not the bypass is constructed. With the additional development, traffic is expected to almost double by the year 2025. For more information on existing and future traffic, please see Chapter 1, Section 1.3.2.

The "No Build" alternative does not address the purpose and need of the project. Congestion will increase as the area develops. The already high accident rate can be expected to rise as congestion increases. Regional trips will be increasingly delayed and the level of service will decrease.

Two additional road connections between Industrial Avenue and Auburn Ravine included in the City's General Plan, Ferrari Ranch Road and Lincoln Parkway, will provide access to newly developing areas. These connections will also result in a lower level of service on the existing facility.

2.1.2 AAC2 and A5C1

The combined A and C corridor alternatives begin approximately 0.5 km (0.3 mi) south of Industrial Ave. The alignments curve in a northwesterly direction and proceed over Industrial Ave. and the Union Pacific Rail Road (UPRR) tracks. The alignments create cul-de-sacs at Moore Road. The alignments then turn in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing SR65.

Near Nicolaus Road, the AAC2 and A5C1 alignments are located east of Lakeside Dr. by approximately 335 m (1100 ft) and 230 m (750 ft), respectively. From Nicolaus Road, the AAC2 and A5C1 alignments continue along Corridor AC on a north-northeast

bearing until the point where they were near the UPRR tracks. At this location, the alignments curve to the west.

The A5C1 and AAC2 alternatives share the same alignment for approximately 2.5-km (1.6 mi). Just south of Coon Creek, the AAC2 alignment stays roughly parallel with existing SR65, while the A5C1 alignment veers northwest for about 1470 m (4800 ft), then veered north, eventually merging with the AAC2 alignment at Riosa Road. These alignments continue north where they tie back into the existing facility approximately 2 km north of Sheridan. The A5C1 has less right-of-way impact on the farmland north of Wise Road than alternative AAC2. Under these alternatives, right-of-way for future interchanges would have been acquired at Wise and Riosa Roads.

These alternatives provide four lanes from just south of Industrial Avenue to Nicolaus Road. North of Nicolaus Road, the bypass provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue and Nicolaus Road have interchanges and at-grade intersections would be constructed at Wise Road and Riosa Road and an undercrossing at Dowd Road. These alternatives include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The disadvantage of the AC alignments is that they go through areas supporting high quality vernal pools. In addition, since these alternatives were developed, numerous housing developments have been constructed in the path of these alternatives. An additional 461 to 469 residents would have been directly impacted. In addition to increased impacts on local residents, there would have been the associated increase in right-of-way costs and possible soundwalls.

2.1.3 D1 Alternative

The D1 alternative begins at the same location south of Industrial Avenue as the AC alignments. The alignment crosses the railroad tracks and turns in a northwesterly direction, proceeding to the west side of the Lincoln Airport. From near Auburn Ravine to west of the airport, the D1 alignment passes through an area of scattered single-family dwellings. This alignment would require five to ten residential acquisitions and may be sufficiently close to as many as ten other residences requiring soundwalls for noise abatement.

West of the airport near Nicolaus Road, the D1 alignment veers north towards Waltz Road. After Waltz Rd., the D1 alignment turns northwesterly towards Sheridan, parallel to and about 610 m (2000 ft) west of the existing SR 65. North of Sheridan, the D1 alignment would connect with the existing SR 65 west of the railroad tracks. This would avoid crossing the railroad tracks at the north end of the proposed bypass.

Under this alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would serve

Lincoln Airpark and Nelson Lane would need to be improved at a local cost to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise Road and Riosa Road. This alternative would have included an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also would have included bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D1 alternative was eliminated due to higher impacts on high value marsh, additional residents and businesses would be affected, and negative public response from the Rockwell Lane community.

2.1.4 D13 Alternative

The D13 alignment was developed in response to public reaction to the D1 alignment impacts to residences on Rockwell Lane and in an effort to reduce impacts to wetlands at the south end of the bypass. The D13 Alternative begins 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at approximate kilometer post 19.9 (PM R12.4). This alignment deviates from existing SR65 just south of its intersection with Industrial Avenue. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the D13 alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction, crossing Dowd Rd approximately 91.4 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins the existing SR65 0.2-km (0.1 mi) south of the Bear River. The D13 alignment measures 20.6 km (12.8 mi) in total length.

As in the D1 alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would have served the Lincoln Airpark; therefore, Nelson Lane would have needed to be reconstructed to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise

Road and Riosa Road. This alternative would include an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative would include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D13 alternative was not chosen as the preferred alternative due to impacts to the USDA Wetland Conservation Easement near Sheridan. In addition, higher impacts to marsh, agricultural land and businesses would occur.

2.1.5 D13 South Modified

The D13 South Modified was developed in response to the open house of September 22, 1999. Area citizens proposed a plan that would move the D13 alternative further away from the residential development located near Auburn Ravine and First Street. The proposal required using the D1 alignment from Industrial Avenue to Nelson Lane and D13 from Nelson Lane to the end of the project. This public proposal was presented to the City of Lincoln. The Project Development Team (PDT) decided to maintain the D13 alignment along this development up to the vicinity of Moore Road. From this point, this alignment separates from D13 to the southwest and ties back in to the D13 alignment just west of Nelson Road. (See Figure 2-2)

The D 13 South Modified was developed to move the D13 alignment away from the Brookview and Park Estates subdivisions. Consequently, by moving the alignment away from the subdivision, several structures and homes at and near a working ranch would have been affected.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative includes an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also has bridges at Industrial Avenue, Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

This alternative was eliminated due to the impact on the USDA Wetland Conservation Easement property and increased impacts to waters of the US and wetlands.

Figure 2-2 D 13 South Modified

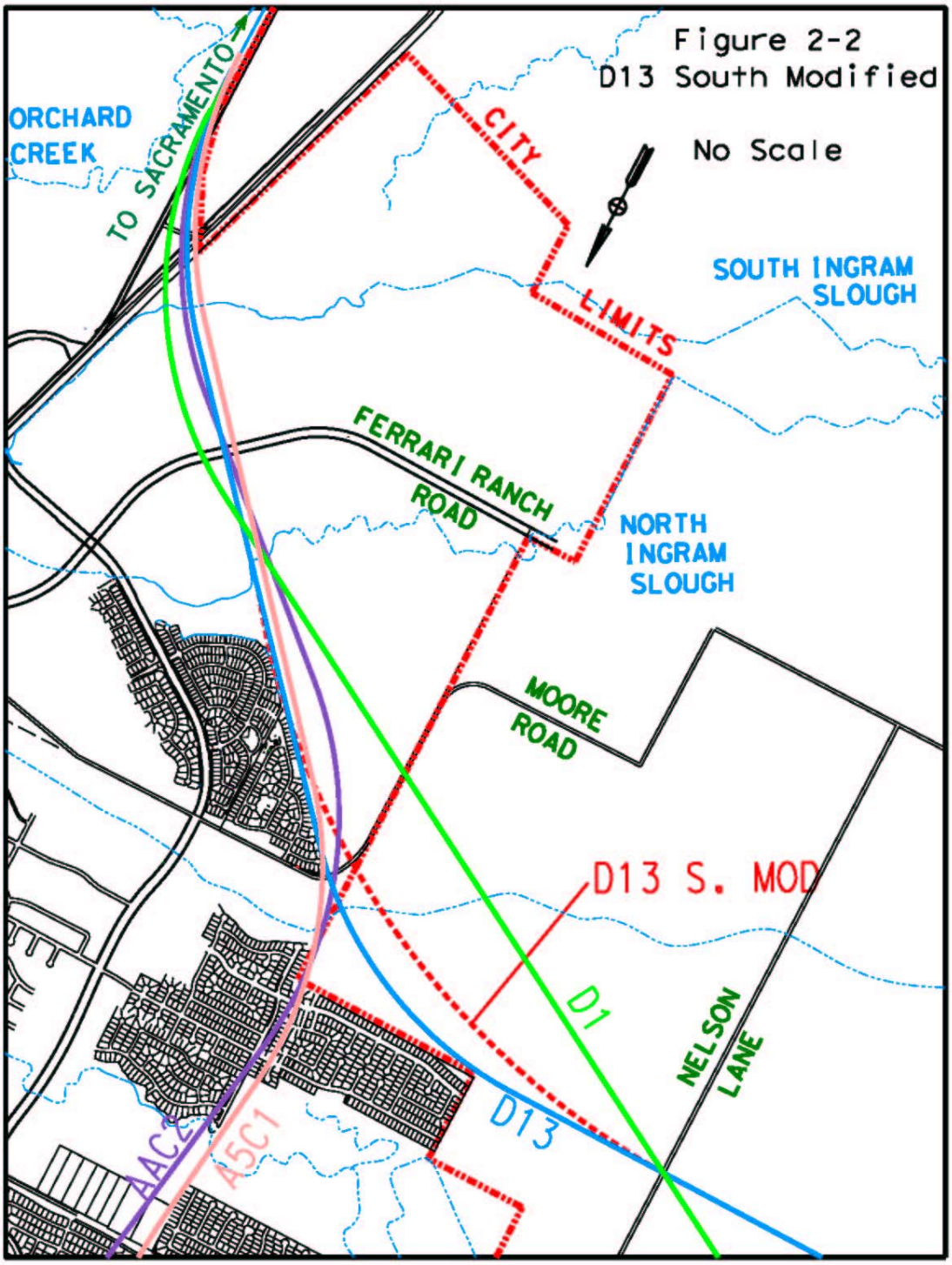
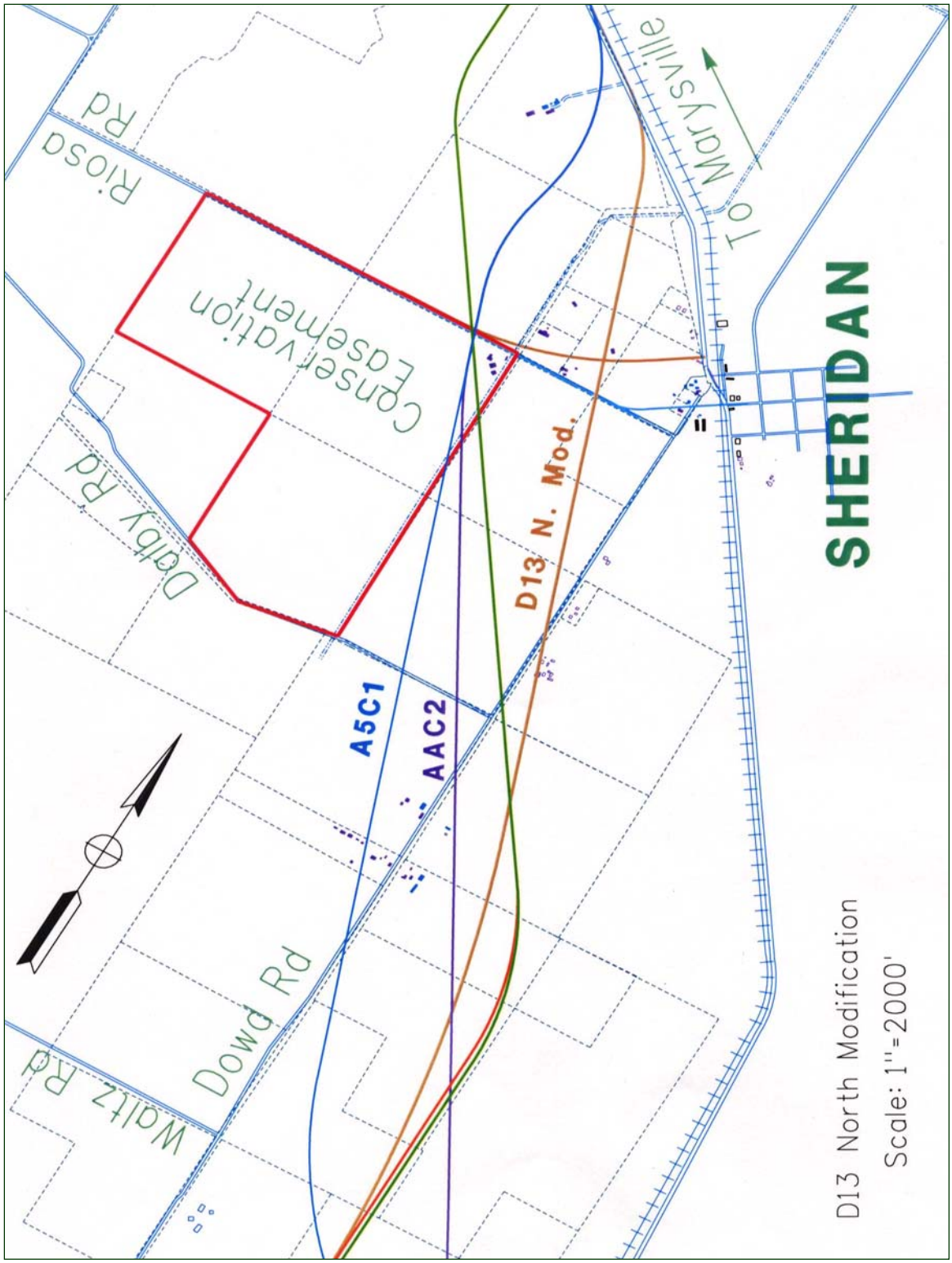


Figure 2-3 D 13 North Modified



2.1.6 D13 North Modified (Preferred Alternative)

The D13 North Modified alternative begins approximately 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at kilometer post 19.3 (PM R12.0). This alignment deviates from the existing SR65 just south of its intersection with Industrial Ave. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the Preferred Alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction crossing Dowd Road approximately 91 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins existing SR65 just south of the Bear River at KP 38.3 (R23.8). The total length of the D13 North Modified alignment is approximately 20 km (12.4 mi).

Phase 1 of this alternative would provide four lanes from just south of Industrial Avenue to just north of North Ingram Slough. North of North Ingram Slough, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange, and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative has an overcrossing at Nicolaus Road and contains bridge structures at UPRR/Industrial Avenue, South Ingram Slough, proposed Ferrari Ranch Road, North Ingram Slough, Auburn Ravine, Markham Ravine, Airport Creek, Coon Creek, South Yankee Slough, North Yankee Slough and Big Yankee Slough.

As funding becomes available, additional lanes will be constructed and intersections will become interchanges. The ultimate project is scoped as a four-lane freeway from Industrial Avenue to SR 65 at Sheridan, with interchanges Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. Overpasses will be constructed at Nicolas Road and cul de sacs will be constructed at Moore Road and Dowd Road.

Floodplain Easement

A 32.4 ha (80 ac) floodplain easement is proposed for the northeast quadrant of the Wise Road intersection. This easement will allow the road to be constructed at a lower profile, saving the cost of additional fill. The floodplain easement will also prevent any development from occurring in that area.

Coon Creek (LEDPA) Conservation Easement

A number of concepts were considered to avoid potential indirect and secondary impacts to aquatic resources caused by the intersection and later the interchange at Wise Road to the Coon Creek Watershed. Conservation Easements in the Coon Creek

watershed equivalent to the approximate cost of constructing the overcrossing structure at Wise Road; approximately $3.9 million, were included in the project to address these concerns.

Discussion of the Preferred Alternative

All reasonable alternatives were developed to a comparative level of detail so their relative merits may be evaluated. After reviewing public comments and coordinating with the regulatory agencies and the City of Lincoln it was determined that the D13 North Modified alternative, which includes conservation easements, was the LEDPA and therefore has been identified as the preferred alternative.

An Alternatives Analysis based on the earlier alignments; AA, A5, AAC2, A5C1, D1 and D13, was completed in 1998 in accordance with the Section 404 (b)(1) Guidelines and the NEPA/404 Integration Process. The purpose of the analysis was to evaluate the reasonableness and practicability of a number of alternatives for meeting the objectives of the project and provide documentation for the preparation of the Section 404 permit. The Section 404 (b)(1) Guidelines require that this analysis be adequate to identify the "Least Environmentally Damaging Practicable Alternative" (LEDPA). This was accomplished by comparing the alternatives for practicability, project purpose and overall environmental effects.

Upon analysis, the D corridor alignments are less damaging than the A/C alignments due to the presence of high quality wetlands and within the AC corridor, and the D13 is less damaging than the D1 due to increased wetland impacts. None of these three alternatives, the D1, D13 and D13 North Modified were clearly superior with regards to impacts to wetlands. However, the D 1 and D13 both impacted property that is under the USDA Wetland Conservation Easement.

Further information on the alignments was provided to the regulatory agencies in mid 2003 to advance the LEDPA and to identify a preferred alternative. D13 North Modified which includes conservation easements was accepted as the LEDPA by the regulatory agencies and has since gone through further design refinements and has received a "non jeopardy, no adverse modification of critical habitat," Biological Opinion from FWS under Section 7 of the Endangered Species Act. (See Appendix J)

Wetland Impacts

Preliminary design information was used to compare the alternatives before obtaining EPA, FWS and the USACE's concurrence on the LEDPA. The application of USFWS guidelines and recommendations regarding direct and indirect impacts was applied which resulted in higher impacts on the preferred alternative. All of the other alternatives would have similar increased impacts to natural resources with these revisions. Only those impacts that have changed are listed in Table 2-1.

Table 2-1 D13 Alternative Impacts

Alternative	Wetland Impacts	Vernal Pool Impacts	Oak Woodland	Residents affected
D 13	5.3 ha (13.1 ac) 4.73 ha (11.7 ac)	2.2 ha (5.4 ac) 2.14 ha (5.3ac)	4.45 ha (11.0 ac)	10
D 13 South Modified	5.91 ha (14.6 ac)	3.28 ha (8.1 ac)	1.17 ha (2.9 ac)	10
D 13 North Modified	5.5 ha (13.6 ac)	2.23 ha (5.5 ac)	4.45 ha (11.0 ac)	12
D 13 North Modified (Design Revisions)	6.54 ha (16.15 ac)	*Direct Impacts 10.9 ha (26.9 ac) *Indirect Impacts 8.5 ha (21.0 ac)	5.35 ha (13.22 ac)	18

*These revised impacts are calculated based upon FWS guidelines for determining impacts to vernal pools.

In addition to the permanent impacts, temporary impacts that will occur during construction are as follows:

- Vernal and freshwater marsh habitats: 0.04 ha (0.09 ac)
- Other non-wetland waters: 0.15 ha (0.36 ac)
- Mixed riparian forest habitats: 1.52 ha (3.76 ac)

The application of FWS methodology that was applied to the LEDPA caused some of the increase in impacts to vernal pools (habitat for vernal pool fairy shrimp). Under the initial methodology, if a vernal pool was partially within the project footprint and partially outside of the footprint, the portion that was within the direct project impact area was calculated as being directly impacted and the area outside of the project footprint was calculated as indirectly impacted. In addition, vernal pools within a 250-foot buffer on either side of the project limits were calculated as being indirectly impacted (according to FWS guideline interpretation). However, once this original impact calculation was submitted to FWS during the Section 7 consultation, FWS requested that the calculations be further revised according to their guidelines. Consequently, any vernal pool partially impacted by the project is now considered directly impacted and vernal pools that are hydrologically connected are now considered indirectly impacted even if they are beyond the original 250-foot indirect buffer area.

Wetlands and vernal pools were found to be present throughout the project area. The cumulative and indirect impacts of the project were similar for all of the initial project alternatives, although the Preferred Alignment was the only one that did not require the acquisition of property that is under the USDA Wetlands Conservation Easement in the USDA Wetlands Reserve Program.

2.1.7 Features of the D13 North Modified

Structures

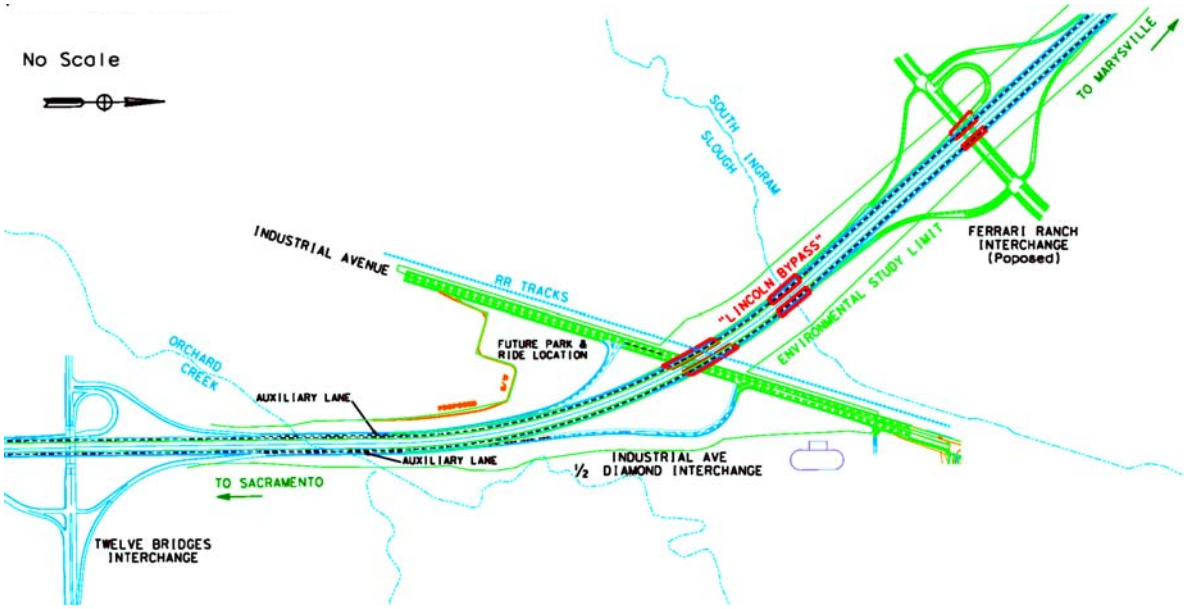
The following table lists the structures that will be required for this project.

Table 2-2 Structures

Bridge Name	Bridge Length (meters)	Bridge Length (feet)
Industrial Ave UC and OH Right	116.7	383
Industrial Ave UC and OH Left	118.5	388.80
S. Ingram Slough Bridge Right	69.3	227.37
S. Ingram Slough Bridge Left	68.2	223.76
Auburn Ravine Bridge	166	545
Markham Ravine Bridge	72	236.23
Nicolaus Road OC	79.7	261.55
Airport Creek Bridge	15	49.22
Coon Creek Bridge	120	393.72
S. Yankee Slough Bridge	26.5	86.95
N. Yankee Slough Bridge	35	114.84
Big Yankee Slough Bridge	48	157.49
Dowd Yankee Bridge*	40.5	132.88

*Note: Dowd Yankee Bridge is located on the realigned Dowd Road and spans Big Yankee Slough

Figure 2-4 Park and Ride



Park and Ride

Acquisition of right-of-way near Industrial Avenue and SR 65 for a Park and Ride facility has been included in the project. Caltrans, PCTPA and the City of Lincoln have a MOU regarding the park and ride facility. The acquisition cost responsibility has been transferred to the City of Lincoln and Placer County, who will work together on dedicating the land for the park-and-ride facility. The PCTPA will fund $1.1 million for

construction capital from Congestion Management Air Quality (CMAQ) or other funding sources. The geometric layout of the Park and Ride facility has been designed although it will not be constructed as part of the bypass project (See Figure 2-4).

Transit service between the proposed Park-and-Ride facility and the nearest Sacramento Regional Transit Light Rail station, with an anticipated "build out" to the Antelope/Sacramento-Placer County line, could provide an important transit link for the residents of Lincoln, Rocklin and Roseville. Yuba-Sutter Transit, Lincoln Transit Service, and Placer County Transit would all consider incorporating the proposed Park-and-Ride facility within their service system when it is built. The convenience and proximity of I-80's High Occupancy Vehicle lane downstream could be an incentive for the public to use the Park-and-Ride facility to avoid congested mixed flow lanes and eliminate more congestion. The Park-and-Ride facility would be a convenient and logical location for residents to leave vehicles while carpooling/vanpooling or taking transit, removing vehicles from the highway and improving air quality. Caltrans, PCTPA and SACOG are actively pursuing further High Occupancy Vehicle lane development.

While the demand for a park and ride facility extends to Sheridan, the majority of the demand is located in the City of Lincoln; therefore, a single park-and-ride facility location was preferred over multiple facilities. Considering the size and central location of the proposed park and ride site, a single location can more easily be incorporated into the local transit routes and if Sacramento Regional Transit were to decide to extend rail service to the area, this facility could also serve as a possible parking lot for light-rail commuters.

Utility Relocation

Utility conflicts have been identified, however, the relocation of conflicting utilities cannot be initiated until completion of the Project Approval & Environmental Document (PA&ED). After PA&ED, conflict maps will be sent to utility companies. The companies and utilities are shown on Table 2-3 below.

Pacific Gas and Electric (PG&E) gas transmission lines near Dowd and Riosa Roads will require relocation. These lines, 8 inches and 16 inches in diameter, traverse the Lincoln landscape in a southeast to northwest direction. These lines run through portions of new development in Lincoln and continue northwest toward the town of Sheridan where they conflict with the proposed bypass construction. At Dowd road, between Dalby Road and Riosa Road, the project impacts approximately 1,000 linear feet of the 16-inch gas line and approximately 1,700 linear feet of the 8-inch line. It is anticipated that relocation will require the lines to cross the bypass path at an approximate 90 degree angle, continue north in parallel with the bypass where it once again connects with the existing gas lines.

Table 2-3 Utility Conflicts

COMPANY	UTILITY	LOCATION
Pacific Gas & Electric Co.	Power	Various locations throughout project limits
Pacific Gas & Electric Co.	Gas	At Dowd Road, Riosa Road and South of Moore Road
AT&T (Formerly SBC & Pacific Bell)	Telephone and Fiber Optic	Various locations throughout project limits
City of Lincoln	Water and Sewer	Within the City of Lincoln jurisdiction
Q-West Communications	Fiber Optics	Various locations throughout project limits
Sprint	Fiber Optics	Various locations throughout project limits
Kinder Morgan (Energy Partners)	Oil	Along RR tracks near Industrial Avenue
UPRR	Communication lines	Along Industrial Avenue
South Sutter Water District	Aqueduct	At Riosa Road
Greenfield Communication Inc.	Telephone and Cable	South of Moore Road

At just north of Riosa Road near the South Sutter Water District canal, the project will again conflict with approximately 500 linear feet of the 16-inch gas line and approximately 1,100 linear feet of the 8-inch line.

In addition, it is estimated that both lines will require a bore and jack crossing of the Bear River lateral of South Sutter Water District's canal.

Non-Standard Features

The interchange at Industrial Avenue will be designed as a half diamond interchange. Constructing a full diamond interchange required an at-grade crossing of the railroad tracks for the northbound traffic. The existing and future alignment of Industrial Avenue will remain just east of and parallel to the railroad. To build a northbound on-ramp at the Industrial Ave., a "U" shape northbound on-ramp is needed. This would require a large amount of right-of-way acquisition. This movement will be served by the future Ferrari Ranch Interchange. An analysis performed by Caltrans Traffic Forecasting & Modeling confirmed that without this half diamond interchange the level of service in this section would deteriorate.

A design exception request, regarding minimum distances between two successive ramps or interchanges, may be needed if the City of Lincoln maintains the position and location of their local roads where they intersect with the proposed bypass (e.g. Ferrari Ranch Rd.). The minimum interchange spacing is 1.5 km (1 mi) in urban areas. If the City of Lincoln later proposes to build a new interchange at Ferrari Ranch Road, a design exception regarding this issue would be submitted concurrently with the PSR for that proposed project. The City of Lincoln would also be responsible for the environmental document.

Phasing of Construction

Because of fierce competition for transportation dollars in Placer County, funding for this project is limited. In order to balance the need for the project and limited

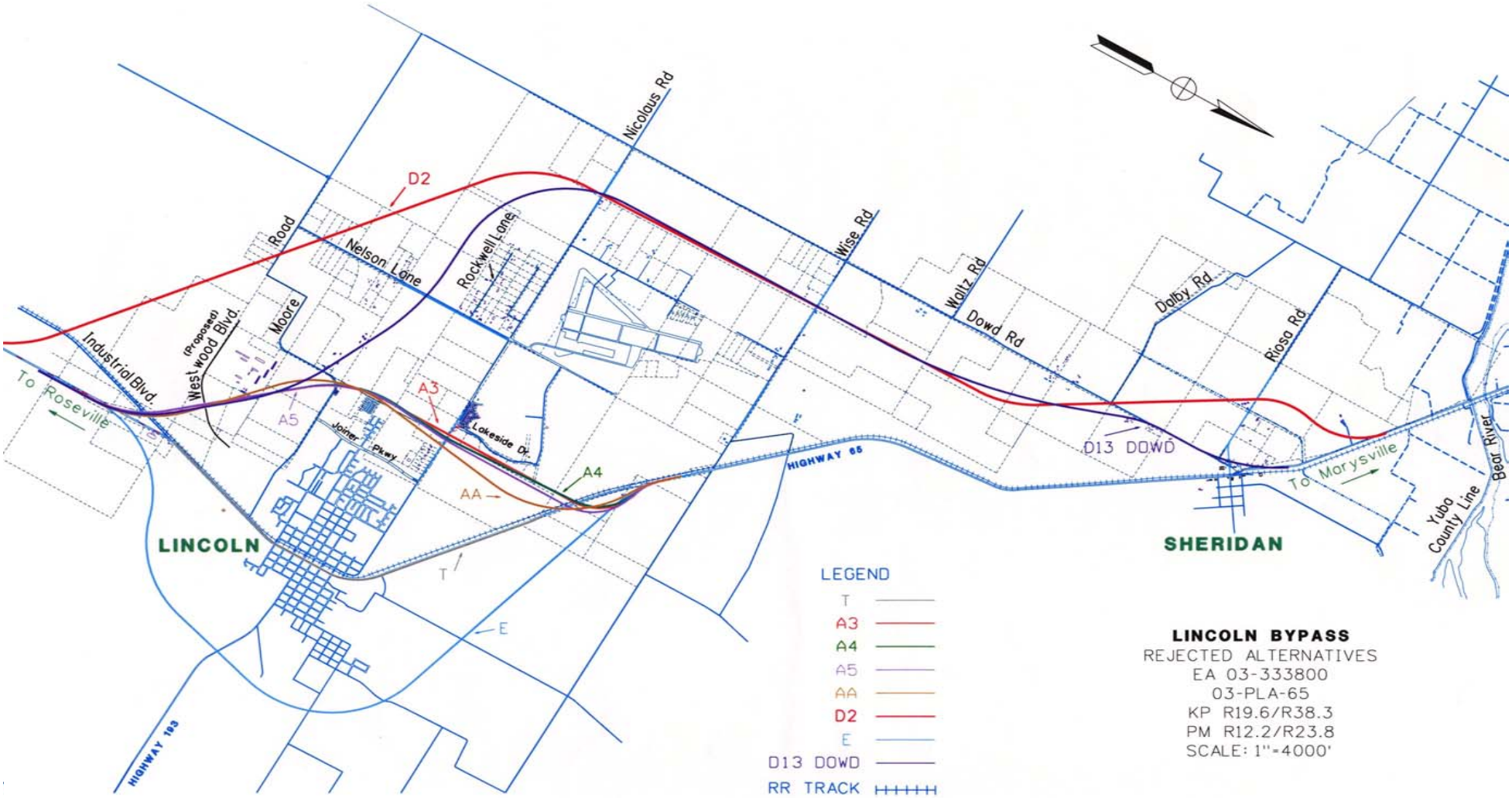
funding, construction will be phased to address the current need, and then as congestion increases, funding will be allotted for the completion of the freeway.

There will be at least two phases to the project. Phase 1 is to construct a four-lane freeway up to just north of Ingram Slough. After Ingram Slough, a two-lane highway will be built to the end of the project. Industrial Avenue will have a partial interchange. At-grade intersections will be built at Nelson Lane, Wise Road and Riosa Road. As funding becomes available, the additional two lanes will be added and intersections will be converted to interchanges.

Table 2-4 Summary of Impacts

	A5C1 Alternative	AAC2 Alternative	D1 Alternative	D13 Alternative	D13 South Modified Alternative	D13 North Modified Alternative
Wetlands/ Non-wetland Waters	7.85 ha (19.4 ac) wetlands/waters 4.65 ha (11.5 ac) vernal pool/swale 2.59 ha (6.4 ac) of marsh Two high value vernal pool complexes	6.23 ha (15.4 ac) wetlands/waters 3.80 ha (9.4 ac) vernal pool/swales 1.83 ha (4.5 ac) of marsh Two high value vernal pool complexes	5.30 ha (13.1 ac) wetlands/waters 2.43 ha (6.0 ac) vernal pool/swales 2.38 ha (5.9 ac) of marsh One high value marsh	4.73 ha (11.7 ac) wetlands/waters 2.14 ha (5.3 ac) vernal pools/swales 2.22 ha (5.5) ac of marsh One high value marsh	5.91ha (14.6 ac) wetlands/waters 3.28 ha (8.1 ac) vernal pool/swales 2.22 ha (5.5 ac) marsh	5.50 ha (13.6 ac) wetlands/waters 2.23 ha (5.5 ac) vernal pools/swales 2.95 ha (7.3 ac) of marsh
Special Status Species	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk	Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk
Natural Communities Wildlife, Fisheries	93.68 ha (231.5 ac) grasslands containing vernal pools 2.06 ha (5.1 ac) riparian forest 6.11 ha (15.1 ac) oak woodland	88.18 ha (217.9 ac) grasslands containing vernal pools 1.05 ha (2.6 ac) riparian forest 10.16 ha (25.1 ac) oak woodland	76.01 ha (187.8ac) grasslands containing vernal pools 1.13 ha (2.8 ac) riparian forest 0.4 ha (1.0 acre) oak woodland	70.05 ha (173.1 ac) grasslands containing vernal pools 1.21 ha (3.0 ac) riparian forest 3.28 ha (8.1 ac) oak woodland	76.65 ha (189.4 ac) grassland/ vernal pool 1.05 ha (2.6 ac) riparian forest 0.08 ha (0.2 ac) oak woodland	80.98 ha (200.1 ac) grassland/ vernal pool 1.213 ha (3.0 ac) riparian forest 3.28 ha (8.6 ac) oak woodland
Water Quality	202.92 ha (501.4 ac) footprint with 11 stream crossings	196.20 ha (484.8 ac) footprint with 11 stream crossings	195.79 ha (483.8 ac) footprint with 9 stream crossings	213.88 ha (528.5 ac) footprint with 9 stream crossings	210.28 ha (519.6 ac) footprint with 9 stream crossings	214.69 ha (530.5 ac) footprint with 9 stream crossings
Cultural Resources	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register. Impacts to recorded archeological site	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.	Requires small amount of right-of-way from property eligible for National Register.
Section 4(f) Use	Yes, *de minimis*	If the archaeological site were determined to require preservation in place, then this alternative would affect a Section 4(f) property.	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*	Yes, *de minimis*
Agricultural Land	52.17 ha 128.9 ac	51.1 ha 126.3 ac	84.4 ha 208.5 ac	102.11 ha 252.2 ac	92.84 ha 229.4 ac	94.74 ha 234.1 ac
Hazardous Waste	Potential	Potential	Potential	Potential	Potential	Potential
Land Use/ Socio-economics	Residences: 461 Businesses: 5	Residences: 469 Businesses: 2	Residences: 20 Businesses: 6	Residences: 10 Businesses: 3	Residences: 10 Businesses: 1	Residences: 8 Businesses: 3
Cost	$159 million (min) $200 million (max)	$163 million (min) $195million (max)	$174 million (min) $205 million (max)	$165 million (min) $196 million (max)	$164 million (min) $195 million (max)	$166 million (min) $197 million (max)

Figure 2-5 Alternatives Withdrawn from Consideration



2.2 ALTERNATIVES WITHDRAWN FROM CONSIDERATION PRIOR TO CIRCULATION OF DRAFT EIS/R

The following alternatives were eliminated from further consideration for a variety of reasons that are included in the description of each alternative. Figure 2-5 shows the location of these alternatives. Table 2-5 summarizes the alternatives that were reviewed and why they were eliminated from further review.

Table 2-5 Summary of alternatives withdrawn from consideration in the DEIS/R

ALTERNATIVE	REASON FOR ELIMINATION
AA	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.
A5	Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.
A3	Would not alleviate traffic problems or accommodate future traffic demands. Alignment would close existing Lakeside Drive and disrupt existing subdivision.
A4	Would not alleviate traffic problems or accommodate future traffic demands.
D2	Would have greater impacts on dwellings, wetlands and vernal pools than the D1 alternative.
D13 Dowd Modified	Eliminated from further consideration due to the non-access controlled segment on Dowd Road, proximity to existing driveways and traffic safety and operations.
T	Would fail to meet regional traffic needs. Numerous cross-streets and driveways would remain and traffic congestion would increase.
E	This alignment would not meet the regional traffic demands and existing traffic patterns.
TSM (Transportation System Management)	The October 1995 Major Investment Study eliminated this alternative from further consideration.
AFD	Would require extensive frontage roads and right-of-way. The 1990 Stage II Project Work Program eliminated this alternative from further consideration.

2.2.1 The AA and A5 Alternatives

Since the "AA" and "A5" alternatives were first developed, numerous housing developments have been constructed in the path of these alternatives. Consequently, the "A" alternatives impact quite a few more residents than the alternatives in the "D" corridor. Additional soundwalls could be required to protect the residents not directly affected (relocated) by these alternatives.

In addition, the "AA" and "A5" alternatives will not alleviate traffic within the project area as outlined by the Purpose & Need. This is because the "A" corridor ties back into the existing two lane SR 65 near Wise Road, which cannot accommodate the future traffic. Northbound traffic flowing from the "A" alternative must pass through the Wise Road and Riosa Road intersections on existing SR 65. These intersections will need to be controlled with a traffic signal and cannot accommodate the future traffic demand. Traffic on existing SR 65 will become congested. This congestion will

deteriorate to the point that traffic will backup onto the A Bypass alternative. The "D" and "AC" corridors connect back to existing SR 65 north of the Riosa Road intersection and will not be delayed by this intersection. In addition, the "A" alternative has much higher delay and lower speed than the other alternatives.

There are several protected resources that would be affected by these alternatives. The "A" corridor (including AA, A3, A4 and A5) crosses through areas of high quality vernal pools between Nicolaus Road and the Union Pacific Transportation Company (UPTC) railroad tracks. Near the north connection with existing SR 65, Bogg's Lake hedge hyssop (*Gratiola heterosepala)*, a California endangered plant species, has been found. In addition, a mature stand of oak trees is located within the "A" corridor near Nicolaus Road. A pair of nesting Swainson's hawks, a California threatened species, have been observed nesting in this stand of oaks.

In addition to not meeting the purpose of the project, the "AA" and "A5" alternatives do not meet the design parameters that were agreed upon for this project. The "A5" line impacts excellent quality wetlands near the beginning of the project, as well as an Oak woodland near Nicolaus Road. However, the "A5" line does avoid the California Endangered Bogg's Lake hedge hyssop, located in vernal pools north of the existing highway. Below is a description of the "AA" and "A5" alternatives.

Alternative AA

The "AA" line begins approximately 0.5 km (0.3 mi) south of Industrial Avenue at KP 20 (PM12.5). The alignment curves in a northwesterly direction and proceeds over Industrial Ave. and the UPTC tracks, intersecting Moore Road approximately 607 m (1992 ft.) from the Moore Road/Joiner Parkway intersection. The line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Auburn Ravine, Alternative "AA" is just west of the (USGS topographical map) section line between sections 16 and 17.

At Nicolaus Road, the "AA" line was set approximately 335 m (1100 ft) east of Lakeside Drive. From Nicolaus Road, the "A" line continues on a north-northeast bearing until it nears the UPTC tracks where it curves to the left, proceeds over the railroad tracks and existing SR 65, tying back into the existing highway approximately 0.4 km (0.3 mi) south of Wise Road. The "AA" alignment is approximately 8.0 km (5 mi) long and terminates at KP 28 (PM17.3).

Alternative A5

The "A5" alternative was created to avoid the Lincoln Airpark in the event it develops before the modified route is adopted. This alternative is 8.05 km (5.0 mi) long, beginning approximately 0.5 km (0.3 mi) south of Industrial Ave. at KP 20 (PM12.5) and ending at KP 28 (PM17.1). The alignment curves in a northwesterly direction and

proceeds over Industrial Ave. and the UPTC tracks. Near the section corner at Moore Road, the line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Nicolaus Road, the "A5" line is approximately 247 m (810 ft) east of Lakeside Drive and 38 m (125 ft) east of the section line. At the north end of the project this alignment proceeds via grade separation over the railroad tracks and the existing highway, similar to the other "A" alternatives.

2.2.2 Alternative A3 and A4

The "A3" and "A4" alignments were developed to minimize impacts on the biologically sensitive areas in the "A" corridor. This is based on the assumption that the area west of the section line has fewer protected resources than the area east of the section line. The "A3" and "A4" alternatives were dropped in favor of "A5", which, at the time, affected less residential area.

Alternative "A3" was withdrawn from consideration due to the need to close Lakeside Drive. The City of Lincoln strongly opposes the closure of Lakeside Drive. Closing Lakeside Drive would disrupt the planned subdivision including a loop golf course located just north of the Fairway Dr./Nicolaus Road intersection. Construction of Lakeside Drive was accomplished through an Assessment District. Relocating this road and utilities would alter existing easements and create a complex financial situation

Alternative "A4" removes more of the oak trees near Nicolaus Road than the "A3" line, but substantially less than the "A" line, and wetland impacts are less than the "A" line. The "A4" line has substantially less impact on vernal pools than the A line and also avoids the area where the Bogg's Lake hedge hyssop is found.

A3

"A3" coincides with the A alignment in the southerly section of the project to Auburn Ravine. There it veers north, running parallel and west of the section line. North of Nicolaus Road, the "A3" line continues on the west side of the section line. The alignment crosses over the railroad tracks and the existing highway, then turns in a northwesterly direction and conforms with existing SR 65.

At Nicolaus Road, the "A3" line is approximately 168 m (551 ft) east of Lakeside Drive. Construction of Nicolaus interchange would require the closure of Lakeside Drive. Alternate access to the Lincoln Airpark could be provided by improving the connection to Fairway Drive located approximately 305 m (1000 ft) west of Lakeside Drive. Improvements to the interior streets in Lincoln Airpark would mitigate some of the effects of closing Lakeside Drive at Nicolaus Road.

Alternative A4

The "A4" alternative is a variation of the A line. South of the Auburn Ravine, the A4 line coincides with the A alignment. The A4 alignment generally runs to the west

side of the section line, minimizing the impact on wetlands in the area. Approaching Nicolaus Road, the alignment shifts approximately 46 m (151 ft) east of the "A3" line and 213 m (699 ft) east of Lakeside Drive. Construction of the "A4" alignment would not require the closure of Lakeside Drive. The distance between the southbound ramps intersection and Lakeside Drive is 137 m (449 ft). Although this interchange configuration has less capacity than a partial cloverleaf, as in the A alternative, adequate capacity at the off-ramp intersection and nearby local intersections can be provided.

2.2.3 Alternative AFD

The "AFD" alternative considered future upgrading to an expressway/freeway from near Wise Road to north of Sheridan, if an "A" Corridor alternative was initially constructed. The "AFD" line would follow the entire "A" Corridor and rather than connecting with existing SR 65 at the north end of the "A" Corridor, the "AFD" line would proceed on a new alignment east of the existing highway. The "AFD" line would then cross the existing highway, approximately three miles south of Sheridan, where it would conform to the north end of the "D" Corridor alignments.

Another version of the "AFD" would be to upgrade the existing alignment from north of the "A" Corridor alignment to north of Sheridan. This alignment would require extensive frontage roads and right of way.

The "AFD" alignment was evaluated in the 1990 Stage II Project Work Program and was not considered feasible due to its high cost.

2.2.4 Alternative D2

The "D2" alternative was developed in an attempt to reduce the impact on wetlands and residents in the southern portion of the project. This alignment begins 2 km (1.24 mi) south of the "D1" line. The "D2" line is roughly parallel to the "D1" line upon leaving the existing alignment to near Nicolaus Road. North of Nicolaus Road, the "D2" line coincides with the "D1" alignment. The "D2" alignment would require the removal of four to seven residential dwellings and possible soundwalls for approximately five dwellings. Based on a preliminary survey, the "D2" line has a greater impact on dwellings and vernal pools than the "D1" line. It is also longer and more remote from Lincoln and has a greater impact on wetlands than the "D1" line. For these reasons, the "D2" was eliminated from further study.

2.2.5 Alternative D13 Dowd Modified

This alignment was developed in response to the USDA Wetland Conservation Easement. The D 13 Dowd Modified was developed at the same time as the D 13 North Modified. This alternative follows the D 13 alignment until it meets Dalby Road, where it curves east to join Dowd Road, meeting with SR 65 at Sheridan. Dowd Road would be

widened and improved to accommodate the increased traffic, but would remain a two-lane road. The portion of the alternative along Dowd Road would not be access controlled.

The rejection of this alternative was based on safety and operation due to location of existing driveways, which would interfere with the operation of the facility.

2.2.6 Alternative T

The "T" alternative upgrades the existing SR 65 alignment to four lanes. From Industrial Ave. to Auburn Ravine and from Gladding Road to near Wise Road, a four-lane expressway would be constructed on existing SR 65 alignment. From Auburn Ravine to Gladding Road, the "T" line proposed to provide four lanes plus a continuous left turn lane. This can generally be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.6 m (12 ft) to 2.4 m (8 ft). One or two parking lots could be constructed on vacant land between the junction of SR 193 and Sixth Street, providing these properties do not develop first. Also, older houses on F Street (one block east) could be converted to parking.

Drainage throughout the downtown section would need to be updated to current standards. South of First Street, it is anticipated the entire structural section will need to be reconstructed.

Telephone poles throughout the town are located .9 m (3 ft) behind the face of the curb on the west side of the highway. In addition, a major natural gas junction valve is located east of the clay plant. This valve and possibly some of the gas line would require relocation. Railroad crossing gates would require reconstruction.

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problems of numerous cross streets and driveways. Initially, widening to four lanes may reduce the accident rate at the numerous intersections in town. As Lincoln grows, traffic through the central business district will become more congested and it is anticipated the intersection accident rate will increase.

Constructing the four-lane section through the downtown area does not leave an option for future widening. The 10-year and 20-year LOS for four lanes downtown are projected to be E and F respectively. After the 20-year design period, the only viable option to enhance the level of service and capacity will be to construct a bypass.

The Lincoln General Plan policy is to "promote and renew the existing central business district, in order to provide diversified business opportunities." Heavy traffic volumes associated with a four-lane facility, loss of parking and the removal of at least one existing business are not consistent with the General Plan.

Caltrans Transportation Concept Report (TCR) calls ultimately for a four-lane freeway on this section of highway. For the above reasons, this alternative does not satisfy the regional or local requirements for the State highway.

2.2.7 Alternative E

The "E" Alternative begins south of Industrial Ave. similar to the "A" and "D1" alignments. The "E" line turns in a northwesterly direction around the east side of Lincoln and proceeds through vacant land until it crosses SR 193. The terrain through this first section is flat to rolling hills and land use is primarily grazing. After crossing SR 193, the alignment proceeds northerly and crosses Auburn Ravine. North of Auburn Ravine, there are scattered houses and ranchettes. In this area the alignment turns in a westerly direction. The "E" line crosses Virginiatown Road and McCourtney Road in this area. The line passes along the north edge of the claybed prior to reconnecting with the existing facility. This alignment was developed as an alternative to the A alignment. The "E" alignment distance is approximately 4.2 km (2.6 mi) out of direction as compared to the existing facility. The traffic analysis indicates that a major portion of through traffic would exit the expressway and proceed through Lincoln to save time and distance travel. This alignment, therefore, does not satisfy the purpose and need of the project.

2.2.8 TSM (Transportation System Management) Alternative

The Transportation System Management and Travel Demand Management (TSM/TDM) Alternative was evaluated and eliminated as an isolated alternative in the Major Investment Study. This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Other TSM measures include signal optimization, two-way left turn lanes, right turn only lanes, parking prohibitions and outside the central core, shoulder widening, truck lanes, passing lanes and merge/ diverge lanes.

The TSM/TDM alternative received the fifth highest score in the evaluation of eight alternatives which included converting the existing highway to four lanes, a minimum bypass alternative, a two and four lane bypass alternative, commuter rail trip diversion, intercity transit bus service and transportation system management and travel demand management (TSM/TDM). Given the City of Lincoln's low-density land uses and an economy of small business employers, TSM/TDM alternatives may only have limited applicability within the study area. Assuming five percent of the forecasted inter-

regional commute traffic will divert from SR 65 to TSM/TDM applications within the study area, the benefits to SR 65 would be marginal.

Although the Intercity Bus Service and TSM/TDM alternatives scored low as independent alternatives, combined with an improvement such as the bypass alternatives, they would play an important role in the effective use of the overall transportation system.

Acquisition of right-of-way for a park and ride facility is included in the project, and will be located at the junction of Industrial Avenue and SR 65. As a stand-alone project, the park and ride would not be capable of resolving the impacts from the projected increase in traffic.